

The heat transmitted per hour

or, S

$$\left( \frac{\pi}{4} d^2 \right) L$$

Sectional area through tubes available for water flow

$$\frac{\pi}{4} d^2 = 144 \text{ sq. in.}$$

$$\therefore 3600 \text{ v}n = \frac{\pi}{4} d^2 f$$

or  $n$

$$\frac{4 \times 144 \times W}{3600} = 17.78$$

$$\text{But, } S = \frac{(a - l)/t}{144} \text{ sq. ft.,}$$

$$0.7/144 \text{ or } \frac{1.2H}{144} = \frac{128}{144} = 0.87 \text{ ft.}$$

Or, inserting for value of  $l/l$ ,

$$\frac{128}{4 \times 144 W} = 0.87$$

For example, taking the conditions given in the calculation on p. 231, where  $T_s = 105^\circ \text{ F.}$ ,  $\Delta T = 76^\circ \text{ F.}$ ,  $K = 600 \text{ Btu/h. ft. }^\circ\text{F.}$  and taking  $W = 20,000 \text{ lb.}$  of exhaust steam per hour,  $W = 600 \text{ lb. sec.}$ ,  $l = 5 \text{ ft. per second}$ ,

$$\text{then, } \frac{105}{105.95} = \frac{95}{105.95} = 0.90 \quad 1.0647 \quad 18^\circ \text{ F.}$$

From the example on p. 231,

$$W = 50 \times 20,000, \\ = 1,000,000 \text{ lb. per hour.}$$

$$S = \frac{1,000,000}{600 \times 18} = 1760 \text{ sq. ft.}$$

Assuming the condenser has 3 passes, and the tubes  $1 \frac{1}{2} \text{ in. outside diameter}$ , and, say,  $0.65 \text{ in. diameter inside}$ ,